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MENBERU, BENIYAM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/656,103	KATO, MINAKO	
	Examiner	Art Unit	
	BENIYAM MENBERU	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-30 and 41-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-30 and 41-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claims 25, 30, 44, 49, 53, and 54 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 44-52 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101" – publicly available at USPTO.GOV, "memorandum to examining corp"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. In order for a process to be "tied" to another statutory category, the structure of another statutory category should be positively recited in a step or steps

significant to the basic inventive concept, and NOT just in association with statements of intended use or purpose, insignificant pre or post solution activity, or implicitly.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 25, 28, 29, 30, 41, 42, 44, 47, 48, 49, 50, 51, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6027196 to Gotoh et al in view of U.S. Patent No. 5982990 to Gondek further in view of U.S. Patent Application Publication No. US 2003/0169438 A1 to Velde et al.

Regarding claim 25, Gotoh et al '196 discloses an image processing apparatus comprising:

a first unit for converting primary color data into color data for outputting a dark color material only in a first mode (column 8, lines 47-59; color conversion of primary colors (RGB) using color processor; Figures 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution B is for outputting dark color only (column 9, lines 9-13, 30-35)); and

a second unit for converting the primary color data into color data for outputting both the dark color material and a light color material in a second mode (column 8, lines 47-59;

color conversion using color processor; Figure 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution A is for outputting both dark color and light color material (column 9, lines 7-13, 20-30)). However Gotoh et al '196 does not disclose:

a) in first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B;

b) in a second mode wherein the color data converted from the primary color data in the second mode is color data for outputting both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material other than the complementary color of the minimum value of colors.

Gondek '990 disclose:

a) in first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; column 8, lines 22-25, lines 27-31; in transition from white to yellow to black, when **RGB=8,8,0** only dark yellow is used and no light ink (lc or lm) is used and in transition from white to magenta to black, **RGB=8,0,8** only uses dark M and no light ink (lc or lm) is used. Thus in this mode, the RGB values have two max values of 8 and one minimum value 0.);

b) in a second mode wherein the color data converted from the primary color data in the second mode is color data for outputting both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material other than the complementary color of the minimum value of colors (column 7, lines 27-35; max

value for R, G, B is 8; column 7, lines 40-57; color conversion from RGB to CMYLcLmK; column 8, lines 27-31, 32-36; in transition from white to magenta to black, for RGB=6,0,6 the G=0 is the minimum and the complementary of Green is magenta. Correspondingly the dark magenta value of 166 is used for this RGB value corresponding to the minimum value G=0. Further the value of light ink cyan (Lc) is 120. Light cyan does not correspond to the complementary color of the minimum value (green) which is **magenta**; Column 8, lines 32-36, in transition from white to cyan to black, for RGB=0,6,6, the minimum is R (red)=0, and the complementary of Red is Cyan. Dark cyan value of 166 is used for this case corresponding to the minimum value R=0. The light magenta value of 120 is used. Light magenta does not correspond to the complementary of minimum color (red) which is **cyan**.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Gondek '990***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Gondek '990***, since ***Gondek '990*** stated in col. 7, Lines 1-14, such a modification would reduce the graininess effect.

However Gotoh et al '196 does not disclose wherein the second unit for converting the primary color data having any two of maximum values and one of minimum values of colors R, G, and B.

Velde et al '438 discloses wherein the second unit for converting the primary color data having any two of maximum values and one of minimum values of colors R, G, and B (page 4, paragraph 63, primary color cyan corresponds to RGB coordinate (0,

1, 1) wherein the value 1 represents the maximum color value for the RGB coordinates. Figure 3A-C; Figure 14; page 7, paragraph 121, 123, 124, 125, 128, 129; the second mode for converting primary colors is the mode wherein the colors belong to the tetrahedron T4 and T6 wherein "light cyan boost" is added to the light cyan data; when the RGB color data is (0, 1, 1) wherein the G and B are maximum and R is minimum, "light cyan boost" is added on top of the cyan color data (primary color) so that there is light cyan data amount at RGB=(0, 1, 1) as shown in Figure 14.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Velde et al '438***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Velde et al '438***, since ***Velde et al '438*** stated in page 2, paragraph 20, such a modification would lower the graininess effect in printing.

Regarding claim 28, Gotoh et al '196 in view of Gondek '990 teaches all the limitations of claim 25. Further Gotoh et al '196 discloses the image processing apparatus of claim 25, wherein the dark color materials are K, C, M and Y inks (column 8, lines 65-67; column 9, lines 1-2).

Regarding claim 29, Gotoh et al '196 in view of Gondek '990 teaches all the limitations of claim 25. Further Gotoh et al '196 discloses the image processing apparatus of claim 25, wherein the light color materials are light cyan and light magenta inks (column 9, lines 1-5).

Regarding claim 30, Gotoh et al '196 discloses an image processing apparatus for forming an image by using dark color materials and light color materials (column 8, lines 64-67; column 9, lines 1-5), the apparatus comprising:

a first unit for forming an image by using just the dark color material for reproducing primary color data in a first mode(column 8, lines 47-59; color conversion of primary colors (RGB) using color processor; Figures 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution B is for outputting dark color only (column 9, lines 9-13, 30-35); and

a second unit for forming an image by using the dark color material and a light color material for reproducing the primary color data in a second mode (column 8, lines 47-59; color conversion using color processor; Figure 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution A is for outputting both dark color and light color material (column 9, lines 7-13, 20-30)). However Gotoh et al '196 does not disclose:

a) wherein in the first mode the primary color has any two of maximum values and one of minimum value of colors R, G and B;

b) the image formed in the second mode wherein the light color material has a different color from the dark color material and wherein the image is formed by using both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material and other than the complementary color of the minimum value of colors.

Gondek '990 disclose:

a) wherein in the first mode the primary color has any two of maximum values and one of minimum value of colors R, G and B (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; column 8, lines 22-25, lines 27-31; in transition from white to yellow to black, when RGB=8,8,0 only dark yellow is used and no light ink (lc or lm) is used and in transition from white to magenta to black, RGB=8,0,8 only uses dark M and no light ink (lc or lm) is used. Thus in this mode, the RGB values have two max values of 8 and one minimum value 0.);

b) the image formed in the second mode wherein the light color material has a different color from the dark color material (column 6, lines 65-67; column 7, lines 1-21, 25-32; for certain range of transition, light and dark color materials/dye are utilized of different colors (light cyan/magenta and dark yellow). Column 7, lines 59-67 ;column 8, lines 1-37; for reproducing white to black colors dark Y is used together with light cyan/light magenta and for the transition from white to magenta to black, dark Magenta (M) is used in addition to light cyan (Lc). Column 3, lines 8-15; Column 4, lines 59-65; the option of using light dots corresponds to mode) and wherein the image is formed by using both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material and other than the complementary color of the minimum value of colors (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; color conversion from RGB to CMYLcLmK; column 8, lines 27-31, 32-36; in transition from white to magenta to black, for RGB=6,0,6 the G=0 is the minimum and the complementary of Green is magenta. Correspondingly the dark

magenta value of 166 is used for this RGB value corresponding to the minimum value G=0. Further the value of light ink cyan (Lc) is 120. Light cyan does not correspond to the complementary color of the minimum value (green) which is magenta; Column 8, lines 32-36, in transition from white to cyan to black, for RGB=0,6,6, the minimum is R (red)=0, and the complementary of Red is Cyan. Dark cyan value of 166 is used for this case corresponding to the minimum value R=0. The light magenta value of 120 is used. Light magenta does not correspond to the complementary of minimum color (red) which is cyan.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Gondek '990***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Gondek '990***, since ***Gondek '990*** stated in col. 7, Lines 1-14, such a modification would reduce the graininess effect.

However Gotoh et al '196 does not disclose wherein the second unit for reproducing the primary color data having any two of maximum values and one of minimum values of colors R, G, and B.

Velde et al '438 discloses wherein the second unit for reproducing the primary color data having any two of maximum values and one of minimum values of colors R, G, and B (page 4, paragraph 63, primary color cyan corresponds to RGB coordinate (0, 1, 1) wherein the value 1 represents the maximum color value for the RGB coordinates. Figure 3A-C; Figure 14; page 7, paragraph 121, 123, 124, 125, 128, 129; the second

mode for converting primary colors is the mode wherein the colors belong to the tetrahedron T4 and T6 wherein "light cyan boost" is added to the light cyan data; when the RGB color data is (0, 1, 1) wherein the G and B are maximum and R is minimum, "light cyan boost" is added on top of the cyan color data (primary color) so that there is light cyan data amount at RGB=(0, 1, 1) as shown in Figure 14.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Velde et al '438***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Velde et al '438***, since ***Velde et al '438*** stated in page 2, paragraph 20, such a modification would lower the graininess effect in printing.

Regarding claim 41, Gotoh et al '196 in view of Gondek '990 teaches all the limitations of claim 25. Further Gotoh et al '196 in view of Gondek '990 discloses the image processing apparatus of claim 25, wherein the primary color data is a color data in which two of colors R, G, and B have their maximum values(Gotoh et al '196 shows in Figures 3A-3b input data going to maximum value of 255 for cyan color (column 9, lines 20-44) and Gondek '990 discloses that cyan is when two of R, G, and B have their maximum values (column 7, lines 28-32; column 8, lines 32-36; in the white -> cyan -> black region, the cyan value of 208 is represented by RGB value = (0, 8, 8) which is G and B value at maximum value out of 8.).), and wherein the dark color material and the light color material are mixed in the second mode(Gotoh et al '196: column 12, lines 33-41).

Regarding claim 42, see rejection of claim 41 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the apparatus of claim 42.

Regarding claim 44, Gotoh et al '196 discloses an image processing method comprising the steps of:

converting primary color data into color data for outputting a dark color material only in a first mode (column 8, lines 47-59; color conversion of primary colors (RGB) using color processor; Figures 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution B is for outputting dark color only (column 9, lines 9-13, 30-35)), and

converting the primary color data into color data for outputting both the dark color material and a light color material in a second mode (column 8, lines 47-59; color conversion using color processor; Figure 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution A is for outputting both dark color and light color material (column 9, lines 7-13, 20-30)).

However Gotoh et al '196 does not disclose in first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B and in second mode wherein the color data converted from the primary color data in the second mode is color data for outputting both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material other than the complementary color of the minimum value of colors.

Gondek '990 disclose: in first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; column 8, lines 22-25, lines 27-31; in transition from white to yellow to black, when RGB=8,8,0 only dark yellow is used and no light ink (lc or lm) is used and in transition from white to magenta to black, RGB=8,0,8 only uses dark M and no light ink (lc or lm) is used. Thus in this mode, the RGB values have two max values of 8 and one minimum value 0.) and in second mode wherein the color data converted from the primary color data in the second mode is color data for outputting both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material other than the complementary color of the minimum value of colors (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; color conversion from RGB to CMYLcLmK; column 8, lines 27-31, 32-36; in transition from white to magenta to black, for RGB=6,0,6 the G=0 is the minimum and the complementary of Green is magenta. Correspondingly the dark magenta value of 166 is used for this RGB value corresponding to the minimum value G=0. Further the value of light ink cyan (Lc) is 120. Light cyan does not correspond to the complementary color of the minimum value (green) which is magenta; Column 8, lines 32-36, in transition from white to cyan to black, for RGB=0,6,6, the minimum is R (red)=0, and the complementary of Red is Cyan. Dark cyan value of 166 is used for this case corresponding to the minimum value R=0. The light magenta value of 120 is used. Light magenta does not correspond to the complementary of minimum color (red) which is cyan.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Gondek '990***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Gondek '990***, since ***Gondek '990*** stated in col. 7, Lines 1-14, such a modification would reduce the graininess effect.

However Gotoh et al '196 does not disclose converting the primary color data having any two of maximum values and one of minimum values of colors R, G, and B.

Velde et al '438 discloses converting the primary color data having any two of maximum values and one of minimum values of colors R, G, and B (page 4, paragraph 63, primary color cyan corresponds to RGB coordinate (0, 1, 1) wherein the value 1 represents the maximum color value for the RGB coordinates. Figure 3A-C; Figure 14; page 7, paragraph 121, 123, 124, 125, 128, 129; the second mode for converting primary colors is the mode wherein the colors belong to the tetrahedron T4 and T6 wherein "light cyan boost" is added to the light cyan data; when the RGB color data is (0, 1, 1) wherein the G and B are maximum and R is minimum, "light cyan boost" is added on top of the cyan color data (primary color) so that there is light cyan data amount at RGB=(0, 1, 1) as shown in Figure 14.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Velde et al '438***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as

taught by ***Velde et al '438***, since ***Velde et al '438*** stated in page 2, paragraph 20, such a modification would lower the graininess effect in printing.

Regarding claim 47, see rejection of claim 28 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the method of claim 47.

Regarding claim 48, see rejection of claim 29 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the method of claim 48.

Regarding claim 49, Gotoh et al '196 discloses an image processing method of forming an image by using dark color materials and light color materials (column 8, lines 64-67; column 9, lines 1-5), the method comprising the steps of:

forming an image by using just the dark color material for reproducing primary color data in a first mode (column 8, lines 47-59; color conversion of primary colors (RGB) using color processor; Figures 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution B is for outputting dark color only (column 9, lines 9-13, 30-35),

forming an image by using the dark color material and a light color material for reproducing the primary color data in a second mode (column 8, lines 47-59; color conversion using color processor; Figure 2 and 3a-c shows the modes used for printing including modes/distributions a, b, and c; mode/distribution A is for outputting both dark color and light color material (column 9, lines 7-13, 20-30)). However Gotoh et al '196 does not disclose

wherein in a first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B; and in a second mode wherein the image formed wherein the light color material having a different color from the dark color material and wherein the image is formed by using both the dark color material corresponding to a complementary color of the minimum value of colors and light ink material other than the complementary color of the minimum value of colors.

Gondek '990 discloses wherein in a first mode wherein the primary color has any two of maximum values and one of minimum value of colors R, G and B (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; column 8, lines 22-25, lines 27-31; in transition from white to yellow to black, when RGB=8,8,0 only dark yellow is used and no light ink (lc or lm) is used and in transition from white to magenta to black, RGB=8,0,8 only uses dark M and no light ink (lc or lm) is used. Thus in this mode, the RGB values have two max values of 8 and one minimum value 0.); and in a second mode wherein the image formed wherein the light color material having a different color from the dark color material (column 6, lines 65-67; column 7, lines 1-21, 25-32; for certain range of transition, light and dark color materials/dye are utilized of different colors (light cyan/magenta and dark yellow). Column 7, lines 59-67 ;column 8, lines 1-37; for reproducing white to black colors dark Y is used together with light cyan/light magenta and for the transition from white to magenta to black, dark Magenta (M) is used in addition to light cyan (Lc). Column 3, lines 8-15; Column 4, lines 59-65; the option of using light dots corresponds to mode) and wherein the image is formed by using both the dark color material corresponding to a complementary color of the

minimum value of colors and light ink material other than the complementary color of the minimum value of colors (column 7, lines 27-35; max value for R, G, B is 8; column 7, lines 40-57; color conversion from RGB to CMYLcLmK; column 8, lines 27-31, 32-36; in transition from white to magenta to black, for RGB=6,0,6 the G=0 is the minimum and the complementary of Green is magenta. Correspondingly the dark magenta value of 166 is used for this RGB value corresponding to the minimum value G=0. Further the value of light ink cyan (Lc) is 120. Light cyan does not correspond to the complementary color of the minimum value (green) which is magenta; Column 8, lines 32-36, in transition from white to cyan to black, for RGB=0,6,6, the minimum is R (red)=0, and the complementary of Red is Cyan. Dark cyan value of 166 is used for this case corresponding to the minimum value R=0. The light magenta value of 120 is used. Light magenta does not correspond to the complementary of minimum color (red) which is cyan.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Gondek '990***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Gondek '990***, since ***Gondek '990*** stated in col. 7, Lines 1-14, such a modification would reduce the graininess effect.

However Gotoh et al '196 does not disclose reproducing the primary color data having any two of maximum values and one of minimum values of colors R, G, and B.

Velde et al '438 discloses reproducing the primary color data having any two of maximum values and one of minimum values of colors R, G, and B (page 4, paragraph

63, primary color cyan corresponds to RGB coordinate (0, 1, 1) wherein the value 1 represents the maximum color value for the RGB coordinates. Figure 3A-C; Figure 14; page 7, paragraph 121, 123, 124, 125, 128, 129; the second mode for converting primary colors is the mode wherein the colors belong to the tetrahedron T4 and T6 wherein "light cyan boost" is added to the light cyan data; when the RGB color data is (0, 1, 1) wherein the G and B are maximum and R is minimum, "light cyan boost" is added on top of the cyan color data (primary color) so that there is light cyan data amount at RGB=(0, 1, 1) as shown in Figure 14.).

Having the system of ***Gotoh et al '196*** and then given the well-established teaching of ***Velde et al '438***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196*** as taught by ***Velde et al '438***, since ***Velde et al '438*** stated in page 2, paragraph 20, such a modification would lower the graininess effect in printing.

Regarding claim 50, see rejection of claim 41 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the method of claim 50.

Regarding claim 51, see rejection of claim 42 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the method of claim 51.

Regarding claim 53, see rejection of claim 25 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the programming steps of claim 53. Further Gotoh et al '196 discloses a computer-readable recording medium

encoded with computer-executable instructions for performing an image processing method (column 14, lines 15-21; ROM 644).

Regarding claim 54, see rejection of claim 30 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 renders obvious the programming steps of claim 54. Further Gotoh et al '196 discloses a computer-readable recording medium encoded with computer-executable instructions for performing an image processing method (column 14, lines 15-21; ROM 644).

3. Claims 26 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6027196 to Gotoh et al in view of U.S. Patent No. 5982990 to Gondek further in view of U.S. Patent Application Publication No. US 2003/0169438 A1 to Velde et al further in view of U.S. Patent No. 6786578 to Aschman et al.

Regarding claim 26, Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 teaches all the limitations of claim 25. Further Gotoh et al '196 discloses wherein the second mode is a mode in which image quality is higher than that in the first mode (column 2, lines 57-62). However Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 does not disclose wherein the first mode is a fast printing mode.

Aschman et al '578 discloses the image processing apparatus of claim 25, wherein the first mode is a fast printing mode (The second mode is faster (column 3, lines 48-55) which corresponds to the mode using only dark material K, Y, C, M; column 4, lines 33-44).

Having the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** and then given the well-established teaching of ***Aschman et al '578***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** as taught by ***Aschman et al '578***, since ***Aschman et al '578*** stated in col. 1, Lines 27-31; col. 3, lines 50-55 such a modification would provide a mode of using dark material ink only when print speed is important.

Regarding claim 45, see rejection of claim 26 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 further in view of Aschman et al '578 renders obvious the method of claim 45.

4. Claims 27, 43, 46, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6027196 to Gotoh et al in view of U.S. Patent No. 5982990 to Gondek further in view of U.S. Patent Application Publication No. US 2003/0169438 A1 to Velde et al further in view of U.S. Patent No. 6717601 to Sanger further in view of U.S. Patent No. 6592212 to Kakutani.

Regarding claim 27, Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 teaches all the limitations of claim 25. However Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 does not disclose wherein the first mode is a mode for lowering granularity.

Kakutani '212 discloses a mode for lowering granularity (column 25, lines 34-38; column 41, lines 17-35; addition of Dark yellow (DY) helps to lower granularity.).

Having the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** and then given the well-established teaching of Kakutani '212, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** as taught by ***Kakutani '212***, since ***Kakutani '212*** stated in col. 7, Lines 1-7, such a modification would provide better quality for the picture.

However Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 does not disclose the second mode is a mode for color matching.

Sanger '601 discloses a mode for color matching (column 3, lines 6-12; color matching is achieved by adding light color materials.).

Having the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** and then given the well-established teaching of ***Sanger '601***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438*** as taught by ***Sanger '601***, since ***Sanger '601*** stated in col. 3, Lines 4-12, such a modification would provide improved resolution and control in the proof for color matching.

Regarding claim 46, see rejection of claim 27 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 further in view of Sanger '601 further in view of Kakutani '212 renders obvious the method of claim 46.

Regarding claim 43, see rejection of claim 27 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 further in view of Kakutani '212 further in view of Sanger '601 render obvious the apparatus of claim 43.

Regarding claim 52, see rejection of claim 46 as shown above. The apparatus of Gotoh et al '196 in view of Gondek '990 further in view of Velde et al '438 further in view of Kakutani '212 further in view of Sanger '601 render obvious the method of claim 52.

Other Prior Art Cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5795082 to Shimada et al disclose printer.

U.S. Patent No. 6268931 to Yamada et al disclose printing system.

U.S. Patent Application Publication No. US2002/0048031 A1 to Suwa et al disclose color processing.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENIYAM MENBERU whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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